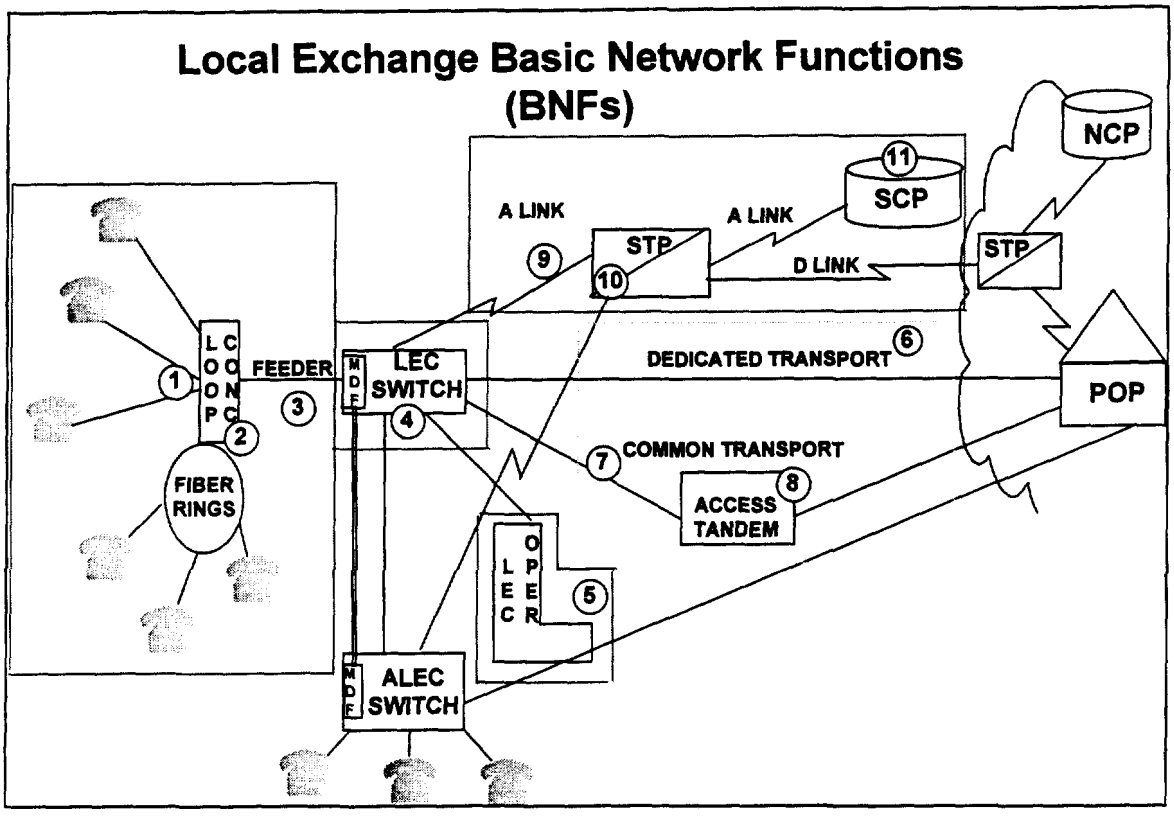


Figure 11 Local Exchange Network Elements

III. SUMMARY

In its Version 2.2, Release 2 formulation, the Hatfield Model estimates reliably and consistently both the forward-looking economic cost of unbundled local exchange network elements and the forward-looking economic cost of basic local telephone service. Because both of these calculations are performed in adherence to TELRIC/TSLRIC principles, Hatfield Model cost estimates provide an accurate basis for the efficient pricing of unbundled network elements and the calculation of efficient universal service funding requirements.

HM2.2.2's methodology is transparent, and it uses public source data for its inputs. These default input values represent the developers' best judgments of efficient, forward-looking engineering and economic practices. But, because many of these inputs are adjustable, users of HM2.2.2 can use the model's automated interface to model directly and simply any desired alternative scenario.

Appendix A

Summary of Changes Between Releases 1 and 2 of the Hatfield Model, Version 2.2

This document describes changes made to the Hatfield Model Version 2.2 between Release 1 and Release 2. The discussions refer specifically to changes incorporated in Release 2 that modify the updated Release 1 version as filed publicly with the FCC on May 30, 1996.

A Benchmark Cost Model (BCM) derivative work called BCM-PLUS has been developed for and copyrighted by MCI Telecommunications Corporation and incorporated into the Release 2 version of the Hatfield Model (which, in this description, is known as HM2.2.2, for Hatfield Model Version 2.2 Release 2). HM2.2.2 also includes an automated user interface with dialog boxes that allow the user to change options and adjust inputs. The interface automates the running of the model as well.

BCM-PLUS Modules

Data module

1. Input and output sheets include an additional column containing business line counts per census block group (CBG).

2. Feeder and distribution distances are increased by 20% in the presence of rocky terrain to accommodate routing of facilities around difficult placement conditions.

3. Feeder length calculation modified to place SAI inside CBG by one-fourth the length of a CBG side.

Loop module

1. The distance at which fiber feeder is assumed is now user-adjustable. In the original BCM, the model assumed fiber feeder cables for total loop lengths of 12,000 ft or greater. In the new version, the calculation is based on total feeder length, and the threshold distance may be adjusted by the user to any value. The default setting is 9,000 ft.

2. The DS-0 capacity per fiber is now adjustable with a default value of 2016 (equivalent to 3 DS-3s). In the original version, the model included a fixed capacity of 672 DS-0s (1 DS-3) per fiber.

3. The number of fibers required per digital loop carrier remote terminal is now adjustable. The default setting is four fibers, which is the same as the value fixed in the original BCM.

4. Lookup tables for optical feeder cable investment now allow user adjustment of cable sizes. The default maximum cable size is now 216 fibers. In the first BCM version, the maximum cross sections for optical and copper fiber and distribution cables were fixed. Also, fiber and copper cable investments per unit length have been adjusted to include engineering, delivery, and installation in addition to material investment. The original BCM did not include installation, engineering, and delivery in this table. The default distribution cable investment table now includes 25-pair cable.

5. The module now computes varying numbers of distribution cables according to density range to accommodate different population distributions in high and low density ranges.

6. Density ranges are now expressed in terms of lines per square mile instead of households per square mile.

Hatfield Model modules

Line Multiplier (now Line Converter) Module:

1. The original Line Multiplier Module used user-specified line multipliers that varied by density range to estimate total residential, business, special access, and public lines. The new Line Converter module applies uniform multipliers to all CBGs to compute residential access lines in each density zone. The business, special access, and public line calculations are based on data that estimate the number of business employees in each CBG. All line totals are computed to match those shown in the ILEC's most recent ARMIS 43-08 reports.

2. The input data contains estimated 1995 household counts per CBG in place of the 1990 counts in the original BCM data.

3. The module computes CBG density in terms of lines, instead of households, per square mile.

Wire Center Investment Module

1. The module removes previous double-counting of trunk ports by reducing the input per-line switching investment by $16 per line, because the model separately calculates the investment in trunk ports for the switches in each wire center and adds the total trunk port investment to the total switching investment in each wire center.

2. STP size is now scaled by the number of A links in the study area; the model previously equipped maximum-capacity STPs in all cases.

3. The module now computes Signaling System 7 C and D link investments, where it previously calculated only A link investments.

4. The transmission facilities investment, expressed as investment per DS-0-mile, is now calculated explicitly for each of the following routes:

common (tandem)
local direct
intra LATA direct
IXC switched access direct
special access

The calculations allow separate user assumptions for optical patch panels, optical multiplexers, regenerator investment and spacing, installation costs, mix of buried/underground/aerial plant, and manhole and pole spacing and installation.

5. The module eliminates double counting of structure costs typically shared between interoffice and feeder facilities.

6. The model now contains reconciled usage calculations between the Expense Module and Wire Center Investment Module.

7. Operator services positions may now be remote from the operator tandem. The user may select the distance; the default value is zero.

8. The module now includes tandem-to-POP switched access direct transport facilities.

9. The end office capacity limits now include entries for switch traffic; they previously included line and processor real-time limits. There are also separate holding time multipliers for business and residence lines to allow users to compute the effects of increased holding time on costs.

10. The module now uses pre-processed interoffice distance data derived from end office, tandem, and STP locations listed in the Local Exchange Routing Guide. This facilitates the running of the model.

Convergence Module

1. The module now separately computes structure costs for aerial, buried, and underground facilities, including poles, conduit, trenching, and manholes. The model independently treats underground and buried cable. The new version eliminates previous double counting of terminals and splices. All structure factors, including the mix of aerial, buried, and underground distribution and feeder facilities are user definable.

2. Digital loop carrier investment is now computed from "ground up." The calculation includes site, housing, power, engineering, common equipment (including multiplexing at the wire center), and line cards.

3. The new version corrects a previous calculation error in local direct and local tandem trunk investment.

4. Default settings eliminate optical multiplexers from the Serving Area Interface. Sufficient fiber capacity exists to allow dedicated fibers to serve each remote terminal, as is consistent with current practices.

Expense Module

1. The module allows economic lives of up to 50 years to be input, (previous maximum permitted life was 32 years).

2. Consistent with the new structure calculations and incorporation of separate underground and buried facilities inputs, the model now calculates separate expense factors for the following network components:

Aerial cable
Underground cable
Buried cable
Poles
Manholes
Conduit

Previously, only aerial and underground factors were calculated.

3. Double counting of DLC terminations and end office line circuits is eliminated.

4. Trunk port costs can now be estimated per DS-0 or per minute.

5. Default user inputs for cost of debt, equity, and debt/equity ratio have been changed.

6. Separate uncollectibles rates for retail and carrier-to-carrier are specified.

7. The module eliminates a previous triple counting of NID (other terminal equipment) investment.

8. Drops are now computed per household rather than per line basis.

9. Dedicated trunking calculations have been reconciled between the Expense Module and the Wire Center Investment Module.

10. IXC switched access and local interconnection unit costs have been added to a new "Cost Detail" worksheet in the Expense Module.

11. NID expenses are now based on ARMIS-reported regulated expense per line (other terminal account); they previously included all "other terminal" expenses and, as a result, overstated NID maintenance expenses.

12. A user-definable carrier-to-carrier customer service expense has been added. Its default value is set at $1.56/line/year -- based on ARMIS 43-04 data on current ILEC expense in serving IXC's access accounts.

13. The new version includes a NID monthly cost calculation in the "Cost Detail" worksheet.

14. Structure sharing fractions have been expanded to allow the user to set independent parameters for aerial, buried, and underground distribution and feeder structure. Default values are 0.33 for all categories.

15. The module now contains a Universal Service Module with the following features:

Network cost built up from UNEs

Network Operations factored to reflect local service only

Local number portability costs have been added as a user input; with a default setting of $0.25 per line per month.

Appendix B

Instruction Manual

Hatfield Model Version 2.2, Release 2

Automated Interface

I. GETTING STARTED

A. SYSTEM REQUIREMENTS

The Hatfield Model (HM) Automated Interface requires the following minimum PC system components to run properly:

- Pentium 133 MHz processor or higher
- 128 MB RAM or more
- CD-ROM drive
- Microsoft Windows 95 or Windows NT operating system
- Microsoft Excel version 7.0

B. TERMINOLOGY

The following terminology is used in this documentation when referring to the Hatfield Model and its components:

HM Modules: The HM Modules are the six functional Excel files which comprise the HM. They are Line Converter, Data Master, Loop Master, Wire Center, Convergence, and Expense.

HM Interface: The user interface to the Hatfield model, which is contained in the Excel file HM_Interface.xls. (Figure 1 shows what the HM Interface looks like.)

Workfile: A workfile is an Excel file created by the HM which contains state-specific HM data and outputs, and can reflect user-specified input parameters. Although the workfile is created by the HM, the user must provide a filename.

Data Template: The data template is a special workfile which contains the default inputs for each state. Data templates use a filename convention which looks like: AZ_rboc__tmplt.xls. Data templates should not be modified by HM users.

C. DIRECTORY STRUCTURE

The HM Interface assumes a basic directory structure as follows:

- HM modules should be stored in C:\hatfield modules
- HM data templates should be stored in C:\hatfield templates

The HM Interface allows users to specify which directories the HM components reside in by selecting 'HM Tools/Set Up Paths and Directories', but it is recommended that the default settings be used.

CD-ROM users should ensure that the paths and filenames point to the appropriate CD-ROM drive (e.g., D:\).

II. RUNNING THE HATFIELD MODEL

D. CREATING A NEW WORKFILE

- Select 'HM Tools/New HM Workfile...'
- Select the appropriate state from the dialog box.
- Select 'HM Tools/Save HM Workfile...' to give the workfile a unique name.
- Press 'GO!'
- Save Expense Module when HM is done calculating
- Select 'HM Tools/Close HM Workfile...' when finished

E. MODIFYING AN EXISTING WORKFILE

Once a workfile has been created, it can be modified to reflect different input parameters. To modify an existing workfile:

- Select 'HM Tools/Open HM Workfile...'
- Modify inputs as necessary, using process described below
- Press 'GO!'
- Save Expense Module when HM is done calculating
- Select 'HM Tools/Close HM Workfile...' when finished

F. CHANGING USER INPUTS

The HM contains several hundred user-adjustable parameters, each of which can be easily modified using the HM Interface. To change a user input, open the appropriate workfile, and select the desired category of inputs from the 'HM Inputs' menu. A dialog box will appear, in which alternative inputs may be specified. (See Figure 2.) If the workfile is saved, the alternative inputs will be saved with it. However, default inputs can always be restored by clicking the 'Reset Defaults' button on the input dialog box.

G. TROUBLESHOOTING

- If the HM Interface displays 'Cannot find file...' errors, ensure that the paths and filenames are correctly specified in the 'HM Tools/Set Paths and Filenames...' menu.
- In the unlikely event that the HM crashes, it is always best to restart.

Figure 1: HM Interface

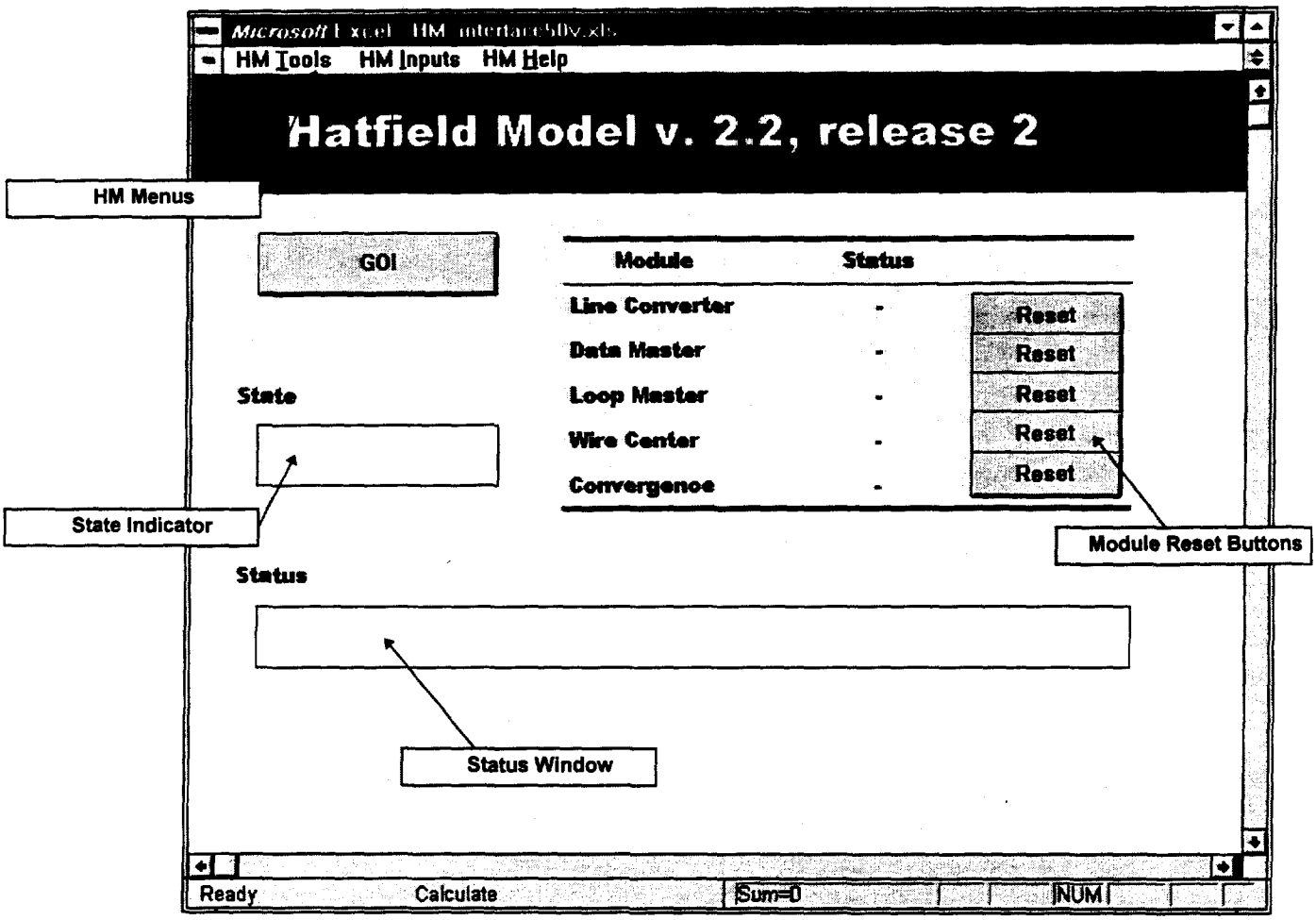
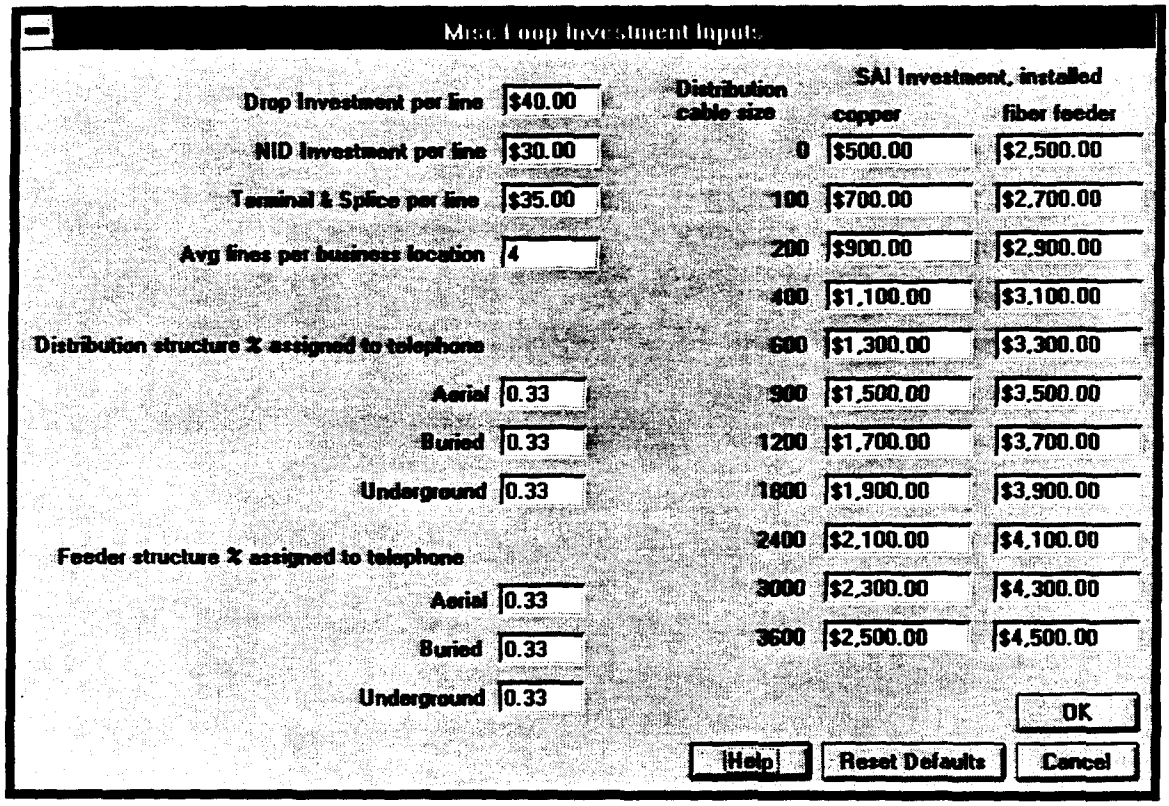


Figure 2: Sample User Input Dialog Box



BCM-PLUS Loop Module Inputs

Cable fill factors

density	Feeder	Distribution
0	0.65	0.5
5	0.75	0.55
200	0.8	0.6
650	0.8	0.65
850	0.8	0.7
2550	0.8	0.75

DS-0s per fiber		Fibers per RT
DLC case	2016	4
AFC case	2016	4

Fiber feeder distance threshold, ft

9,000

Fiber feeder cable inv per foot

Cable Size	u/g	aerial
216	$ 13.10	$ 13.10
144	$ 9.50	$ 9.50
96	$ 7.10	$ 7.10
72	$ 5.90	$ 5.90
60	$ 5.30	$ 5.30
48	$ 4.70	$ 4.70
36	$ 4.10	$ 4.10
24	$ 3.50	$ 3.50
18	$ 3.20	$ 3.20
12	$ 2.90	$ 2.90

Distribution cable inv per ft

Cable Size	u/g	aerial
3600	$ 63.75	$ 63.75
3000	$ 53.25	$ 53.25
2400	$ 42.75	$ 42.75
1800	$ 32.25	$ 32.25
1200	$ 21.75	$ 21.75
900	$ 16.50	$ 16.50
600	$ 11.25	$ 11.25
400	$ 7.75	$ 7.75
200	$ 4.25	$ 4.25
100	$ 2.50	$ 2.50
50	$ 1.63	$ 1.63
25	$ 1.19	$ 1.19

Copper feeder cable inv per ft

Cable Size	u/g	aerial
4200	$ 74.25	$ 74.25
3600	$ 63.75	$ 63.75
3000	$ 53.25	$ 53.25
2400	$ 42.75	$ 42.75
1800	$ 32.25	$ 32.25
1200	$ 21.75	$ 21.75
900	$ 16.50	$ 16.50
600	$ 11.25	$ 11.25
400	$ 7.75	$ 7.75
200	$ 4.25	$ 4.25
100	$ 2.50	$ 2.50

Wire Center Investment Module Inputs

EO switching and traffic parameters

switch real-time limit, BHCA

lines	limit
1	10,000
1,000	50,000
10,000	200,000
40,000	600,000

switch traffic limit, BHCCS

lines	limit
1	10,000
1,000	50,000
10,000	500,000
40,000	1,000,000

switch maximum line size	100,000
switch max line fill	0.80
switch max processor occupancy	0.90
processor feature loading multiplier	1.00
switch installation multiplier	1.1

Interoffice parameters

operator traffic fraction	0.02
total interoffice traffic fraction	0.65
direct-routed fraction of local interoffice	0.98

Transmission parameters

maximum trunk occupancy, CCS	27.5
trunk port, per end	$ 100.00
average direct route distance, miles	10
average trunk usage fraction	0.3

Tandem switching parameters

real time limit, BHCA	1,500,000
port limit, trunks	120,000
common equipment investment	$ 1,000,000
maximum trunk fill	0.8
maximum real time occupancy	0.9
common equipment intercept factor	0.25

switch price/line size references

switch price per line, less trunk circuits @	$ 220.00	$ 86.00	$ 59.00
switch line size	2,782	11,200	80,000

BH fraction of daily usage	0.10
Annual to daily usage reduction factor	270
residential holding time multiplier	1.0
business holding time multiplier	1.0

(offered load assumed for afternoon busy hour)

call attempts/BH

residential	1.3
business	3.5

Signaling parameters

STP link capacity	720
STP maximum fill	0.8
STP investment, per pair, fully equipped	$ 5,000,000
STP common equipment investment, per pair	$ 1,000,000
link termination, both ends	$ 900
signaling link bit rate	56,000
link occupancy	0.4
C link cross section	24
ISUP messages per interoffice BHCA	6
ISUP message length, bytes	25
TCAP messages per transaction	2
TCAP message length, bytes	100
fraction of BHCA requiring TCAP	0.10
SCP investment/transaction/second	$ 20,000

Wire Center Investment Module Inputs

Operator position parameters

investment per position	$ 3,500
maximum utilization per position, CCS	27
operator intervention factor	10
operator position remote distance, mi	0

Wire center parameters

lot size, multiplier of switch room size	2
tandem/EO wire center common factor	0.40

Power and frame investment

served lines in wire center	sum of power and frame
0	$ 10,000
1,000	$ 20,000
5,000	$ 40,000
25,000	$ 100,000
50,000	$ 500,000

Switch room size table

switch size, lines	floor area required
0	500
1,000	1,000
5,000	2,000
25,000	5,000
50,000	10,000

Construction costs, per sq ft

switch size, lines	construction, $/sq ft
0	$ 75
1,000	$ 85
5,000	$ 100
25,000	$ 125
50,000	$ 150

Land price, per sq ft

lines in wire center	price/sq ft
0	$ 5.00
1,000	$ 7.50
5,000	$ 10.00
25,000	$ 15.00
50,000	$ 20.00

Public telephone, per station	$ 1,200

Toll traffic inputs

local call attempts	
call completion factor	0.70
intraLATA calls completed	
interLATA intrastate calls completed	
interLATA interstate calls completed	
local DEMs, thousands	
intrastate DEMs, thousands	
interstate DEMs, thousands	
tandem-routed fraction of total intraLATA traffic	0.2
average direct intraLATA route distance, mi	25
tandem-routed fraction of total interLATA traffic	0.2
average direct access route distance, mi	15

Interoffice transport investment	Unit Cost
Terminal investment	
Number of fibers	24
FOT capacity, DS-3s	12
FOT fill	0.80
FOT, installed	$ 43,000
Pigtails	$ 60
Panel	$ 1,000
EF&I, per hour	$ 55
Medium investment	
Fraction of structure assigned to telephone	0.33
Fraction of structure shared with feeder	0.25
Distance, mi	41
Regenerator spacing, mi	40
Regenerator investment, installed	$ 15,000
Fiber cable inv/ft	$ 2.00
Placement	$ 2.00
Splice spacing,ft	20,000
Splice cost	$ 15.00
Trenching/ft	$ 45.00
Resurfacing/ft	$ 10.00
Conduit/ft	$ 4.00
Number of tubes	2
Manhole spacing	1,000
Manhole inv per manhole	$ 5,000
Total Conduit	
Buried installation/ft	$ 5.00
Pole inv.	$ 450
Pole spacing	150
Weighting	
underground	0.3500
buried	0.5000
aerial	0.1500

Convergence Module Inputs

drop investment per line	$	40
NID investment per line	$	30
terminal and splice per line	$	35
average lines per business location		4

Distribution cable size	SAI investment (installed) copper feeder	SAI investment (installed) fiber feeder
0	$ 500.00	$ 2,500.00
100	$ 700.00	$ 2,700.00
200	$ 900.00	$ 2,900.00
400	$ 1,100.00	$ 3,100.00
600	$ 1,300.00	$ 3,300.00
900	$ 1,500.00	$ 3,500.00
1200	$ 1,700.00	$ 3,700.00
1800	$ 1,900.00	$ 3,900.00
2400	$ 2,100.00	$ 4,100.00
3000	$ 2,300.00	$ 4,300.00
3600	$ 2,500.00	$ 4,500.00

Digital loop carrier inputs

BCM "SLC" (TR-303)

site, housing, and power per RT	$	3,000
maximum lines		672
RT fill factor		0.90
common equipment investment	$	42,000
channel unit investment per line	$	75

BCM "AFC"

site, housing, and power per RT	$	2,500
maximum lines		100
RT fill factor		0.90
common equipment investment	$	10,000
channel unit investment per line	$	150

Convergence Module Inputs

Distribution structure inputs

density range limit	aerial fraction	buried fraction	underground fraction	buried installation/foot	conduit installation/foot
0	0.50	0.50	-	$ 2.00	$ 25.00
5	0.50	0.50	-	$ 2.00	$ 25.00
200	0.50	0.50	-	$ 2.00	$ 25.00
650	0.50	0.50	-	$ 3.00	$ 25.00
850	0.40	0.50	0.10	$ 3.00	$ 45.00
2550	0.65	0.05	0.30	$ 20.00	$ 70.00

pole spacing, feet	150	
pole investment	$ 450	
conduit investment per foot	$ 1.00	w/o trenching
manhole investment, per manhole	$ 3,000	
buried cable armoring multiplier	1.10	

Feeder structure inputs

Copper

density range limit	aerial fraction	buried fraction	underground fraction	manhole spacing, f	buried installation/foot	conduit installation/foot
0	0.50	0.45	0.05	800	$ 2.00	$ 25.00
5	0.50	0.45	0.05	800	$ 2.00	$ 25.00
200	0.50	0.45	0.05	800	$ 2.00	$ 25.00
650	0.40	0.40	0.20	800	$ 3.00	$ 25.00
850	0.10	0.10	0.80	600	$ 3.00	$ 45.00
2550	0.05	0.05	0.90	400	$ 25.00	$ 75.00

pole spacing, feet	150	
pole investment	$ 450	
conduit investment per foot	$ 1.00	w/o trenching
manhole investment, per manhole	$ 3,000	
buried cable armoring multiplier, Cu	1.10	

Fiber

density range limit	aerial fraction	buried fraction	underground fraction	manhole spacing, f	buried installation/foot	conduit installation/foot
0	0.35	0.60	0.05	2000	$ 2.00	$ 25.00
5	0.35	0.60	0.05	2000	$ 2.00	$ 25.00
200	0.35	0.60	0.05	2000	$ 2.00	$ 25.00
650	0.20	0.60	0.20	2000	$ 3.00	$ 25.00
850	0.10	0.10	0.80	2000	$ 3.00	$ 45.00
2550	0.05	0.05	0.90	2000	$ 20.00	$ 70.00

Buried cable armoring per foot, fiber	$ 0.20	

Expense Module Inputs

Debt fraction		0.45
Cost of Debt		0.077
Cost of Equity		0.119
corporate overhead factor		0.100
other taxes factor		0.050
operating state and local income tax factor		0.010
billing/bill inquiry per line per month	$	1.22
directory listing per line per month	$	0.15
service order processing fraction of 6623		0.346
forward-looking network operations factor		0.700
alternative CO switching factor		0.0269
alternative circuit equipment factor		0.0153
EO traffic-sensitive fraction		0.70
per-line monthly LNP cost	$	0.25
Carrier-carrier customer service, per line per year	$	1.56
NID expense per line per year	$	3.00
DS-0/DS-1 crossover		24
DS-1/DS-3 crossover		28
Switch line circuit offset per DLC line	$	35.00

economic life and tax inputs

tax rate	0.40
economic life -- 50 years maximum	
loop distribution	20
loop feeder	20
loop concentrator	10
end office switching	14.3
wire center	37
tandem switching	14.3
OS investment	8
transport facilities	19
STP	14
SCP	14
links	19
public telephones	9
general support	7

Structure fraction assigned to telephone

distribution	
aerial	0.33
underground	0.33
buried	0.33
feeder	
aerial	0.33
underground	0.33
buried	0.33

Attachment 2

Output Tables for SWTX Calculations

Attachment 2a

Question 2a

	Density Range (Lines/Sq. Mi.)						
	0 - 5	5 - 200	200 - 650	650 - 850	850 - 2550	> 2550	Total
Total Investment	$242,793,012	$1,121,873,907	$582,567,254	$190,053,942	$1,635,801,000	$3,158,674,329	$6,931,763,444
Total Investment/Line	$ 3,982.09	$ 1,376.99	$ 739.66	$ 638.65	$ 649.15	$ 631.08	$ 730.74
Loop Investment	$221,760,481	$ 916,475,703	$409,982,355	$129,932,172	$1,154,277,718	$2,153,084,644	$4,985,513,073
Loop Investment/Line	$ 3,637.13	$ 1,124.89	$ 520.54	$ 436.62	$ 458.07	$ 430.17	$ 525.57
EO Switching Investment/Line							$ 134.84
USF Total Monthly Cost/Line							$ 17.56
USF Loop Monthly Cost/Line							$ 12.06
USF EO Switching Cost/Line							$ 2.84
Monthly Transport Cost/Line							
Dedicated Switched							$ 5.90
Common							$ 0.69
Tandem Switch							$ 1.77
Total							$ 8.35
Households	41,374	532,038	444,904	172,255	1,468,389	2,244,990	4,903,950
Residential Lines	45,760	588,441	492,070	190,516	1,624,059	2,482,990	5,423,837
Business Lines	9,764	145,255	189,710	68,730	575,044	1,619,027	2,607,530
Public Lines	350	5,210	6,805	2,465	20,627	58,076	93,534
Total Switched Lines	55,875	738,907	688,585	261,712	2,219,729	4,160,093	8,124,901
Special Access Lines	5,097	75,821	99,026	35,876	300,164	845,109	1,361,093
Total Lines	60,971	814,728	787,611	297,588	2,519,894	5,005,201	9,485,994
USF Monthly Cost/Line	$ 93.38	$ 32.79	$ 18.23	$ 15.88	$ 15.19	$ 14.09	$ 17.56

SOUTHWESTERN BELL - TEXAS

USOA	$(000) DESCRIPTION	43-03 ARMIS COST	HM UNE COST	UNIV SVC RETAIL OPS COST	HM UNE + US RETAIL COST	RATIO: HM UNE+US / ARMIS
	PLANT SPECIFIC EXPENSES					
6112	MOTOR VEHICLES	5,071				
6113	AIRCRAFT					
6114	SPECIAL PURPOSE VEHICLES					
6115	GARAGE WORK EQUIPMENT	414				
6116	OTHER WORK EQUIPMENT	497				
6110	NETWORK SUPPORT	5,982	2,512		2,512	42%
6121	TOTAL LAND & BUILDINGS	112,186	25,730		25,730	
6122	FURNITURE	9,785	5,540		5,540	
6123	OFFICE EQUIPMENT	30,135	17,063		17,063	
6124	GENERAL PURPOSE COMPUTERS	130,683	73,993		73,993	
6120	TOTAL LAND & SUPPORT ASSETS	282,790	122,326		122,326	43%
	TOTAL NETWORK & GENERAL SUPPORT	288,772	124,838		124,838	43%
6211	ANALOG ELECT SWITCH	64,295				
6212	DIGITAL ELECTRONIC SWITCHING	118,431	29,130		29,130	
6215	ELECTRO MECHANICAL	(632)				
6210	CENTRAL OFFICE SWITCHING	182,094	29,130		29,130	16%
6220	OPERATOR SYSTEMS	7,055	910		910	
6231	RADIO SYSTEMS					
6232	CIRCUIT EQUIPMENT	68,606	17,973		17,973	
6230	TRANSMISSION	69,531	17,973		17,973	26%
6311	STATION APPARATUS	46,013				
6341	LARGE PRIVATE BRANCH EXCHANGE	2,992				
6351	PUBLIC TEL TERMINAL EQUIPMENT	17,290	20,360		20,360	
6362	OTHER TERMINAL EQUIPMENT	167,684	16,667		16,667	
6310	TOTAL INFORMATION ORIG/TERM	233,980	37,028		37,028	16%
6411	POLES	2,903	727		727	
6421	AERIAL CABLE	111,342	98,765		98,765	
6422	UNDERGROUND CABLE	26,268	2,624		2,624	
6423	BURIED CABLE	229,148	54,296		54,296	
6424	SUBMARINE CABLE					
6425	DEEP SEA CABLE					
6426	INTRABUILDING NETWORK CABLE					
6431	AERIAL WIRE					
6441	CONDUIT SYSTEMS	4,243	4,237		4,237	
6410	TOTAL CABLE & WIRE FACILITIES	374,510	160,648		160,648	43%
	PLANT NONSPECIFIC OPERATIONS					
6511	TPHFU					
6512	PROVISIONING EXPENSES	952				
6531	POWER EXPENSES	13,752	8,253		8,253	
6532	NETWORK ADMINISTRATION	47,772	28,670		28,670	
6533	TESTING	121,632	72,997		72,997	
6534	PLANT OPERATIONS ADMINISTRATION	83,721	50,245		50,245	
6535	ENGINEERING	61,335	36,810		36,810	
6530	TOTAL NETWORK OPERATIONS EXPENS	328,211	196,974		196,974	60%

6540	ACCESS EXPENSE	35,151				
6561	DEPRECIATION TPIS	983,658	470,636		470,636	
6562	DEPRECIATION TPHFU					
6563	AMORTIZATION - TANGIBLE					
6564	AMORTIZATION - INTANGIBLE					
6565	AMORTIZATION - OTHER					
	CUSTOMER OPERATIONS					
6611	PRODUCT MANAGEMENT	22,043				
6612	SALES	81,834				
6613	PRODUCT ADVERTISING	32,241				
6610	TOTAL MARKETING EXPENSES	136,119				
6621	CALL COMPLETION SERVICE	32,902				
6622	NUMBER SERVICES	146,968		17,075	17,075	
6623	CUSTOMER SERVICES	354,767		138,875	138,875	
6620	TOTAL SERVICES EXPENSES	534,637		155,950	155,950	
	TOTAL CUSTOMER OPERATIONS	670,756		155,950	155,950	23%
	CORPORATE OPERATIONS					
6711	EXECUTIVE	29,773				
6712	PLANNING	7,364				
6710	TOTAL EXECUTIVE & PLANNING	37,137				
6721	ACCOUNTING & FINANCE	37,311				
6722	EXTERNAL RELATIONS	41,052				
6723	HUMAN RESOURCES	55,921				
6724	INFORMATION MANAGEMENT	104,285				
6725	LEGAL	20,332				
6726	PROCUREMENT	13,107				
6727	RESEARCH & DEVELOPMENT	25,530				
6728	OTHER GENERAL & ADMINISTRATIVE	130,439				
6720	TOTAL GENERAL & ADMINISTRATIVE	427,978				
	TOTAL CORPORATE OPERATIONS	465,115	178,889	15,595	194,484	42%
	TOTAL OPERATING EXPENSES	3,639,785	1,217,026	171,545	1,388,571	38%
7240	OPERATING OTHER TAXES	350,246	90,855		90,855	26%
	TOTAL EXPENSES & OPERATING TAXES	**3,990,031**	**1,307,881**	**171,545**	**1,479,426**	**37%**
	TELECOMMUNICATION PLT IN SERVICE					
2111	LAND	98,163	20,820		20,820	
2112	MOTOR VEHICLES	155,262				
2113	AIRCRAFT					
2114	SPECIAL PURPOSE VEHICLES					
2115	GARAGE WORK EQUIPMENT	7,486				
2116	OTHER WORK EQUIPMENT	99,205				
2121	BUILDINGS	1,273,290	270,059		270,059	
2122	FURNITURE	24,969	14,138		14,138	
2123	OFFICE EQUIPMENT	230,889	130,730		130,730	
2124	GENERAL PURPOSE COMPUTERS	330,474	187,116		187,116	
2110	TOTAL LAND & SUPPORT ASSETS	2,219,738	622,862		622,862	28%
2211	ANALOG ELECT SWITCH	1,597,329				
2212	DIGITAL ELECTRONIC SWITCHING	1,509,731	1,082,909		1,082,909	
2215	ELCTROMECHANICAL SWITCHING	80				

2210	CENTRAL OFFICE SWITCHING	3,107,140	1,082,909	1,082,909	35%
2220	OPERATOR SYSTEMS	105,310	16,299	16,299	
2231	RADIO				
2232	CIRCUIT EQUIPMENT	3,030,443	1,032,655	1,032,655	
2230	TRANSMISSION	3,074,191	1,032,655	1,032,655	34%
2311	STATION APPARATUS	2,619			
2321	CUSTOMER PREMISES WIRING				
2341	LARGE PRIVATE BRANCH EXCHANGE	30,186			
2351	PUBLIC TEL TERMINAL EQUIPMENT	114,639	134,994	134,994	
2362	OTHER TERMINAL EQUIPMENT	117,334	361,129	361,129	
2310	TOTAL INFORMATION ORIG/TERM	264,778	496,124	496,124	187%
2411	POLES	188,380	120,740	120,740	
2421	AERIAL CABLE	1,037,567	969,925	969,925	
2422	UNDERGROUND CABLE	1,479,079	338,151	338,151	
2423	BURIED CABLE	3,544,902	1,231,521	1,231,521	
2424	SUBMARINE CABLE				
2425	DEEP SEA CABLE				
2426	INTRABUILDING NETWORK CABLE				
2431	AERIAL WIRE				
2441	CONDUIT SYSTEMS	1,015,481	1,024,992	1,024,992	
2410	TOTAL CABLE & WIRE FACILITIES	7,364,385	3,685,328	3,685,328	50%
	TPIS (BEFORE AMORTIZABLE ASSETS)	**16,146,182**	**6,936,177**	**6,936,177**	**43%**

LIST OF COMBINED ARMIS 43-03 ROWS AND ALGORITHMS

USOA	DESCRIPTION
6110	NETWORK SUPPORT summarizes the following Class A accounts.
6112	MOTOR VEHICLES
6113	AIRCRAFT
6114	SPECIAL PURPOSE VEHICLES
6115	GARAGE WORK EQUIPMENT
6116	OTHER WORK EQUIPMENT
6120	TOTAL LAND & SUPPORT ASSETS summarizes the following Class A accounts.
6121	TOTAL LAND & BUILDINGS
6122	FURNITURE
6123	OFFICE EQUIPMENT
6124	GENERAL PURPOSE COMPUTERS
	TOTAL NETWORK & GENERAL SUPPORT is a summary of accounts 6110 & 6120.
6210	CENTRAL OFFICE SWITCHING summarizes the following Class A accounts.
6211	ANALOG ELECT SWITCH
6212	DIGITAL ELECTRONIC SWITCHING
6215	ELECTRO MECHANICAL
6230	TRANSMISSION summarizes the following Class A accounts.
6231	RADIO SYSTEMS
6232	CIRCUIT EQUIPMENT
6310	TOTAL INFORMATION ORIG/TERM summarizes the following Class A accounts.
6311	STATION APPARATUS
6341	LARGE PRIVATE BRANCH EXCHANGE
6351	PUBLIC TEL TERMINAL EQUIPMENT
6362	OTHER TERMINAL EQUIPMENT
6410	TOTAL CABLE & WIRE FACILITIES summarizes the following Class A accounts.
6411	POLES
6421	AERIAL CABLE
6422	UNDERGROUND CABLE
6423	BURIED CABLE
6424	SUBMARINE CABLE
6425	DEEP SEA CABLE
6426	INTRABUILDING NETWORK CABLE
6431	AERIAL WIRE
6441	CONDUIT SYSTEMS
6610	TOTAL MARKETING EXPENSES summarizes the following Class A accounts.
6611	PRODUCT MANAGEMENT
6612	SALES
6613	PRODUCT ADVERTISING

LIST OF COMBINED ARMIS 43-03 ROWS AND ALGORITHMS

USOA	DESCRIPTION
6620	TOTAL SERVICES EXPENSES summarizes the following Class A accounts.
6621	CALL COMPLETION SERVICE
6622	NUMBER SERVICES
6623	CUSTOMER SERVICES
	TOTAL CUSTOMER OPERATIONS is a summary of the accounts 6610 & 6620.
6710	TOTAL EXECUTIVE & PLANNING summarizes the following Class A accounts.
6711	EXECUTIVE
6712	PLANNING
6720	TOTAL GENERAL & ADMINISTRATIVE summarizes the following Class A accounts.
6721	ACCOUNTING & FINANCE
6722	EXTERNAL RELATIONS
6723	HUMAN RESOURCES
6724	INFORMATION MANAGEMENT
6725	LEGAL
6726	PROCUREMENT
6727	RESEARCH & DEVELOPMENT
6728	OTHER GENERAL & ADMINISTRATIVE
	TOTAL CORPORATE OPERATIONS is a summary of accounts 6710 & 6720.
	TOTAL OPERATING EXPENSES is summary of ALL operating expenses.
2110	TOTAL LAND & SUPPORT ASSETS summarizes the following Class A accounts.
2111	LAND
2112	MOTOR VEHICLES
2113	AIRCRAFT
2114	SPECIAL PURPOSE VEHICLES
2115	GARAGE WORK EQUIPMENT
2116	OTHER WORK EQUIPMENT
2121	BUILDINGS
2122	FURNITURE
2123	OFFICE EQUIPMENT
2124	GENERAL PURPOSE COMPUTERS
2210	CENTRAL OFFICE SWITCHING summarizes the following Class A accounts.
2211	ANALOG ELECT SWITCH
2212	DIGITAL ELECTRONIC SWITCHING
2215	ELCTROMECHANICAL SWITCHING
2230	TRANSMISSION summarizes the following Class A accounts.
2231	RADIO

LIST OF COMBINED ARMIS 43-03 ROWS AND ALGORITHMS

USOA	DESCRIPTION
2232	CIRCUIT EQUIPMENT
2310	TOTAL INFORMATION ORIG/TERM summarizes the following the Class A accounts.
2311	STATION APPARATUS
2321	CUSTOMER PREMISES WIRING
2341	LARGE PRIVATE BRANCH EXCHANGE
2351	PUBLIC TEL TERMINAL EQUIPMENT
2362	OTHER TERMINAL EQUIPMENT
2410	TOTAL CABLE & WIRE FACILITIES summarizes the following Class A accounts.
2411	POLES
2421	AERIAL CABLE
2422	UNDERGROUND CABLE
2423	BURIED CABLE
2424	SUBMARINE CABLE
2425	DEEP SEA CABLE
2426	INTRABUILDING NETWORK CABLE
2431	AERIAL WIRE
2441	CONDUIT SYSTEMS

TPIS (BEFORE AMORTIZABLE ASSETS) is a summary of all Telecommunications Plant assets excluding tangible & intangible assets such as capitalized leases & franchises.